PATENT COOPERATION TREATY

	From the INTERNATIONAL BUREAU
PCT	То:
NOTIFICATION OF ELECTION (PCT Rule 61.2)	Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE
Date of mailing (day/month/year)]
13 June 2000 (13.06.00)	in its capacity as elected Office
International application No. PCT/GB99/03361	Applicant's or agent's file reference PDG/20950
International filing date (day/month/year)	Priority date (day/month/year)
11 October 1999 (11.10.99)	09 October 1998 (09.10.98)
Applicant	
WARD, Graham	
1. The designated Office is hereby notified of its election mad X in the demand filed with the International Preliminary 08 May 2000 (in a notice effecting later election filed with the International Preliminary 08 May 2000 (in a notice effecting later election filed with the International Preliminary 08 May 2000 (was not was	y Examining Authority on: (08.05.00) national Bureau on:
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Olivia RANAIVOJAONA

Telephone No.: (41-22) 338.83.38

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(72) Inventor; and

(75) Inventor/Applicant (for US only): WARD, Graham [GB/GB]; 14 Tressilian Way, Woking, Surrey GU21 3DL (GB).

(74) Agents: GARRATT, Peter, Douglas et al.; Mathys & Squire, 100 Gray's Inn Road, London WC1X 8AL (GB).

(81) Designated States: AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published

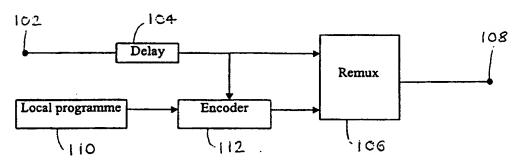
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: DATA COMPRESSION UNIT CONTROL FOR ALIGNMENT OF OUTPUT SIGNAL

(57) Abstract

To enable a single programme in a multiple programme MPEG transport stream (MPTS) to be replaced seamlessly by a locally generated programme, the local coder received the MPTS as a reference signal and outputs transport packets in alignment with the packets of the programme to be

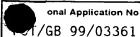


replaced. Timing and other packet parameters are also copied.

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					<u> </u>		



a. classification of subject matter IPC 7 H04N7/24 H04N H04N7/58 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC 7 HO4N HO4J Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) C. DOCUMENTS CONSIDERED TO BE RELEVANT Category ° Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. P,X GB 2 327 548 A (BRITISH BROADCASTING CORP) 1-4,6, 27 January 1999 (1999-01-27) 9-12,1417-20,22 abstract page 3, line 11 -page 3, line 25 page 4, line 24 -page 5, line 7 figures 1,2 WO 97 08898 A (BRITISH BROADCASTING CORP Υ 1 - 27; WELLS NICHOLAS DOMINIC (GB)) 6 March 1997 (1997-03-06) Α 28-34 page 4, line 8 -page 5, line 28 page 9, line 25 -page 11, line 4 page 13, line 3 -page 13, line 8 figures 3,4 Further documents are listed in the continuation of box C. Patent family members are listed in annex. X Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled citation or other special reason (as specified) document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 2 February 2000 08/02/2000 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 Hampson, F

Form PCT/ISA/210 (second sheet) (July 1992)



		GB 99/03361
	ntion) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WEISS S M: "SWITCHING FACILITIES IN MPEG-2: NEVASSARY BUT NOT SUFFICIENT" SMPTE JOURNAL,US,SMPTE INC. SCARSDALE, N.Y, vol. 104, no. 12, 1 December 1995 (1995-12-01), pages 788-802, XP000543847 ISSN: 0036-1682	1-27
Ą	page 796, left-hand column, line 10 -page 796, right-hand column, line 22 figure 8	28-34
A	EP 0 589 657 A (CANON KK) 30 March 1994 (1994-03-30) column 3, line 47 -column 4, line 5 column 14, line 41 -column 14, line 51 figures 3,4	1-34
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ation on patent family members

onal Application No /GB 99/03361

Patent document cited in search report		Publication date	1	Patent family member(s)	Publication date
GB 2327548	Α	27-01-1999	AU WO	8449598 A 9904571 A	10-02-1999 28-01-1999
WO 9708898	A	06-03-1997	GB AU EP EP JP	2307613 A 6825896 A 0846396 A 0923249 A 11511605 T	28-05-1997 19-03-1997 10-06-1998 16-06-1999 05-10-1999
EP 0589657	A .	30-03-1994	JP JP DE DE EP ES US	7023353 A 6104910 A 69324873 D 69324873 T 0891083 A 2132193 T 5796957 A	24-01-1995 15-04-1994 17-06-1999 21-10-1999 13-01-1999 16-08-1999 18-08-1998



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(PCT Article 36 and Rule 70)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Applicant's or agent's file reference		See Notification of Transmittal of International
PDG/20950	FOR FURTHER ACTION	Preliminary Examination Report (Form PCT/IPEA/416)
International application No.	International filing date (day/mont	h/year) Priority date (day/month/year)
PCT/GB99/03361	11/10/1999	09/10/1998
International Patent Classification (IPC) or H04N7/24	national classification and IPC	
Applicant SNELL & WILCOX LIMITED et al.		
This international preliminary exa and is transmitted to the applican		d by this International Preliminary Examining Authority
2. This REPORT consists of a total	of 10 sheets, including this cover	sheet.
been amended and are the b		ne description, claims and/or drawings which have containing rectifications made before this Authority ions under the PCT).
These annexes consist of a total	of sheets.	
3. This report contains indications re	elating to the following items:	
l ⊠ Basis of the report		
II □ Priority		
III 🛛 Non-establishment of	opinion with regard to novelty, in	ventive step and industrial applicability
IV 🔲 Lack of unity of inven	ition	
	under Article 35(2) with regard to tions suporting such statement	novelty, inventive step or industrial applicability;
VI Certain documents of	sited	
VII Certain defects in the	international application	
VIII 🛛 Certain observations	on the international application	
	:	
Date of submission of the demand	Date of	completion of this report
08/05/2000	30.11.2	000
Name and mailing address of the internatio	nal Authori	zed officer
preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 5236	Loese	er, E
Fax: +49 89 2399 - 4465	•	one No. +49 89 2399 8482



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

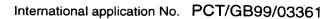
International application No. PCT/GB99/03361

 Basis of the report 	l.	Bas	sis	of	the	repor	t
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1.	res _i the	ponse to an invitatio	rawn on the basis of (substitute sheets which have been furnished to the receiving Office in under Article 14 are referred to in this report as "originally filed" and are not annexed to o not contain amendments (Rules 70.16 and 70.17).):
	1-1	6	as originally filed
	Cla	ims, No.:	
	1-3	4	as originally filed
	Dra	wings, sheets:	
	1-7		as originally filed
2.			uage, all the elements marked above were available or furnished to this Authority in the nternational application was filed, unless otherwise indicated under this item.
	The	ese elements were a	evailable or furnished to this Authority in the following language: , which is:
		the language of a t	ranslation furnished for the purposes of the international search (under Rule 23.1(b)).
		the language of pu	blication of the international application (under Rule 48.3(b)).
		the language of a t 55.2 and/or 55.3).	ranslation furnished for the purposes of international preliminary examination (under Rule
3.		-	leotide and/or amino acid sequence disclosed in the international application, the y examination was carried out on the basis of the sequence listing:
		contained in the in	ternational application in written form.
		filed together with	the international application in computer readable form.
		furnished subsequ	ently to this Authority in written form.
		furnished subsequ	ently to this Authority in computer readable form.
			the subsequently furnished written sequence listing does not go beyond the disclosure in oplication as filed has been furnished.
		The statement that listing has been full	the information recorded in computer readable form is identical to the written sequence rnished.
4.	The	amendments have	resulted in the cancellation of:
		the description,	pages:
	П	the claims	Nos ·



INTERNATIONAL PRELIMINARY EXAMINATION REPORT



		the drawings,	sheets:								
5.		This report has been considered to go bey						not been m	nade, sinc	e they hav	e been
		(Any replacement sh report.)	neet contai	ining suc	h amendi	ments must b	oe referre	d to under i	item 1 and	d annexed	to this
6.	Add	litional observations, i	f necessa	ry:							
III.	Nor	n-establishment of o	pinion wit	th regard	l to nove	Ity, inventive	e step ar	nd industri	al applica	ability	
		estions whether the c e industrially applicab						n inventive	step (to b	e non-obv	ious),
		the entire internation	al applicat	ion.							
	×	claims Nos. 32-34.					-				
be	caus	se:									
		the said international not require an interna						following รเ	ubject mat	tter which o	does
	⊠	the description, claim unclear that no mear see separate sheet) or said cla	aims Nos.	32-34 are	so
		the claims, or said clack could be formed.	aims Nos.	are so ir	nadequat	ely supported	d by the c	description	that no m	eaningful c	pinion
		no international sear	ch report h	as been	establish	ed for the sa	id claims	Nos			
2.	and	eaningful internationa or amino acid sequer ructions:	al prelimina nce listing	ary exami to comply	nation re with the	port cannot be standard pro	oe carried ovided fo	l out due to r in Annex (the failure C of the A	e of the nu dministrati	cleotide ve
		the written form has	not been fi	urnished	or does r	ot comply wi	ith the sta	andard.			
		the computer readab	le form ha	s not bee	n furnish	ed or does n	ot comply	y with the s	tandard.		
٧.		soned statement un					y, inventi	ve step or	industria	ıl applicab	ility;
1.		tions and explanation ement	ns suppo	rting su	ch staten	nent					
	Nov	elty (N)	Yes:	Claims	25-31						
		- 1 /									



INTERNATIONAL PRELIMINARY EXAMINATION REPORT



International application No. PCT/GB99/03361

No:

Claims 1-24

Inventive step (IS)

Yes: No: Claims

Claims 1-31

Industrial applicability (IA)

Yes:

Claims 1-31

No: Claims

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: see separate sheet

1. General

The present application does not satisfy the criteria set forth in Articles 6, 33(2) and 33(3). Details of the objections are set out below.

Concerning Section VIII - Art. 6 PCT:

2.1. Lack of conciseness

The various definitions of the invention given in independent apparatus claims 17, 32 and independent method claims 1, 9, 25 are such that the claims as a whole are not concise, contrary to Art. 6 and Rule 6.1(a) PCT. It is considered that the invention could be drafted by way of a single apparatus claim, and a corresponding single method claim.

2.2. Claim 1

The claim includes the feature of "supplying to a reference input ..., a transport stream input ...", which feature is interpreted as follows: a transport stream is supplied to a reference input.

On the basis of this interpretation, the claim fails to clearly define the origin of the packets that are outputted in alignment with the nominated reference packets.

Moreover, the meaning of the feature "output ... in alignment with the nominated reference packets" is obscure as such.

Finally, the claim fails to establish a relationship between the compression inherently associated with the claimed controlling of a <u>compression</u> unit, and the nomination of reference packets etc.

For these reasons claim 1 contravenes Art. 6 PCT.

2.3. Claim 9

The objections raised in paragraph 2.2 above against certain features of claim 1 also apply to corresponding features of claim 9:

E.g., since the term "those packets" lacks an antecedent in claim 9, it is not clear from which data stream the claimed "reference packets" and "output packets" originate.

For these reasons claim 9 contravenes Art. 6 PCT.

2.4. Claim 17

The objections raised in paragraphs 2.2. and 2.3 above against certain features of claims 1 and 9 also apply to corresponding features of claim 17.

Moreover, the operation of the claimed re-multiplexing is obscure as such.

Finally, it is not clear whether the compression unit addressed in lines 2 and 6 is identical or not identical with the compression unit mentioned in line 8.

For these reasons claim 17 contravenes Art. 6 PCT.

2.5. Claim 25

The objections raised in paragraphs 2.2., 2.3 and 2.4 above against certain features of claims 1, 9, 17 also apply to corresponding features of claim 25.

For these reasons claim 25 contravenes Art. 6 PCT.

2.6. Claim 32

Claim 32 fails to clearly define how/by which means precisely the claimed "fixed overall bitrate in which the instantaneous allocation of that bit rate amongst the programme transport stream is controllable" can be obtained.

In this context, the feature "generates a transport stream reference ... in which the relative occurrence of (reference!) packets ... reflects the desired instantaneous allocation of that bit rate" alludes to generating a transport stream with plural sets each consisting of reference packets only. These sets appear to be used in respective ones of the plurality of compression units.

However, it is not clear whether a compression unit is to receive a single bitstream (ie an individual programme transport stream in which certain packets are marked as reference packets to be maintained in the overall output) or two separate bitstreams (ie an individual programm transport stream and a reference bitstream corresponding to a set from the controller, wherein the reference packets control the packet selection from the program transport stream).

Moreover, at least some of the objections raised in paragraphs 2.2., 2.3 and 2.4 above against certain features of claims 1, 9, 17 also apply to corresponding features of claim 32.

For the reasons given above, claim 32 contravenes Art. 6 PCT due to lack of clarity and failure to provide all the features that are essential to the (alleged) invention.

2.7. Claims 28, 30

The additional features of claims 28 and 30 correspond to features provided with claim 32. Hence, the objections under Art. 6 PCT raised in paragraph 2.6 above against claim 32 correspondingly apply.

3. Concerning Section V - Articles 33(2) and 33(3) PCT

3.1. Prior Art

The following documents are cited:

D1: SMPTE J. 104 (1995), Dec., No.12, pp. 788-802;

D2: WO-A-07/08898;

D3: GB-A-2 327 548 (Document acc. to Rule 64.3 PCT: effective filing date: 18.07.97, publishing date: 27.01.99).

D1 pertains to digital video switching/splicing/multiplexing. In detail (Figs. 6, 8; p.796), D1 discloses providing two bit streams one of which is to be inserted into the other, effecting splicing operations and re-multiplexing to form a new output stream. The splicing inherently requires identifying/referencing/nominating packets to be inserted in the output stream.

D2 also pertains to digital video switching. Fig.4 discloses supplying a transport stream (Bitstream A) with respective transport packets to a reference input (at 54) of a splicing and compression unit (58, 64), nominating (by switch 58) a set of transport packets as reference packets, and outputting packets (R; output bitstream) "in alignment with the reference packets".

3.2. Claims 1, 9, 17

Each of claims 1, 9, 17 is cast in such broad and obscure terms that its subject-matter appears to be anticipated (Articles 33(2) and 33(3) PCT contravened) by the disclosure of any of prior art documents D1 and D2.

3.3. Claim 25

The presently available prior art does not appear to disclose a plurality of compression units as claimed. Accordingly, the subject-matter of claim 25 is considered novel (Art. 33(2) PCT).

The skilled-person confronted with the obvious task of merging a plurality of digital transport streams and starting with a

design disclosed in D1 or D2 would arrive at the subject-matter of claim 25, as far is can at present be construed, without exercise of an inventive step. Thus claim 25 contravenes Art. 33(3) PCT.

3.4. Claims 32-34

In view of the obscurities of the claimed subject-matter (cf paragraph 2.6 above) it is not at present possible to examine claims 32 as well as claims 33 and 34 with respect to novelty and inventive step.

3.5. Dependent claims 2-8, 10-16, 18-24, 26-31

3.5.1.

The additional features of claims 2-8, 10-16 and 18-24 as far as these can at present be construed are considered to be anticipated by explicit and implicit disclosure of document D1 or D2, that is from the interpretation of these documents by the skilled reader.

Thus these claims contravene Articles 33(2) and (3) PCT.

3.5.2.

The additional features of claims 26 and 27 as far as these can at present be construed are considered to be anticipated by explicit and implicit disclosure of D1 or D2, that is from the interpretation of any these documents by the skilled reader.

The additional features of claims 29 and 31 as far these can at present be construed are considered not to extend beyond the normal design options of the skilled person in light of the presently available prior art.

Hence, claims 26, 27, 29 and 31 are considered to contravene Art. 33(3) PCT.

3.5.3.

The obscurity of the additional features of claims 28 and 30 identified in paragraph 2.7 above is such that at least inventive subject-matter cannot at present be identified therein. Accordingly, these claims contravene Art. 33(3) PCT.

4. Concerning Section VII: Description and other belongings

- 4.1. The claims are not cast in the two-part form as required by Rule 6.3(b) PCT.
- 4.2. The claims are not complemented with reference signs (Rule 6.2(b) contravened).
- 4.3. Documents reflecting the prior art described on page 1 are not identified in the description (Rule 5.1(a)(ii) PCT contravened).
- 4.4. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 cited above is not mentioned in the description, nor are these documents identified therein.
- 4.5 The drawings are not such that all of them can be reproduced at a 2/3 magnification factor as required by Rule 11.13(c) PCT. This is due to the hand-written reference signs and at least some of the drawn lines that are drawn at an insufficient line width.

In Fig.2, reference numbers for the switch array (212), and for the standalone packet request generator (210) are missing.

PATENT COOPERATION TREATY PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PDG/20950		of Transmittal of International Search Report 220) as well as, where applicable, item 5 below.
International application No.	International filing date (day/month/year)	(Earliest) Priority Date (day/month/year)
	• ,	
PCT/GB 99/03361	11/10/1999	09/10/1998
Applicant		
SNELL & WILCOX LIMITED et	al.	
This International Search Report has been according to Article 18. A copy is being trar	prepared by this International Searching Aut	thority and is transmitted to the applicant
This International Search Report consists o	of a total of sheets. a copy of each prior art document cited in this	s report.
1. Basis of the report		
With regard to the language, the ir language in which it was filed, unle	nternational search was carried out on the ba ss otherwise indicated under this item.	isis of the international application in the
the international search wa Authority (Rule 23.1(b)).	s carried out on the basis of a translation of	the international application furnished to this
b. With regard to any nucleotide and was carried out on the basis of the	/or amino acid sequence disclosed in the in sequence listing:	nternational application, the international search
· —	al application in written form.	
filed together with the interi	national application in computer readable for	m.
furnished subsequently to t	his Authority in written form.	
	his Authority in computer readble form.	
the statement that the subs international application as	equently furnished written sequence listing of filed has been furnished.	does not go beyond the disclosure in the
the statement that the infor furnished	mation recorded in computer readable form i	is identical to the written sequence listing has been
2. Certain claims were found	d unsearchable (See Box I).	
3. Unity of invention is lacki	·	
4. With regard to the title ,		
the text is approved as sub	mitted by the applicant	
	ed by this Authority to read as follows:	
	CONTROL FOR ALIGNMENT OF O	UTPUT SIGNAL
·		
5. With regard to the abstract,		
X the text is approved as sub	mitted by the applicant	
the text has been established		ity as it appears in Box III. The applicant may, port, submit comments to this Authority.
6. The figure of the drawings to be publis		1
X as suggested by the applica	ant.	None of the figures.
because the applicant failed	d to suggest a figure.	
because this figure better c	haracterizes the invention.	

International Application No PCT/GB 99/03361

A. CLASSIFICATION OF SUBJECT IPC 7 H04N7/24

TER H04N7/58

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC $7 \quad H04N \quad H04J$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

	NTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Ρ,Χ	GB 2 327 548 A (BRITISH BROADCASTING CORP) 27 January 1999 (1999-01-27)	1-4,6, 9-12,14, 17-20,22
	abstract	10
	page 3, line 11 -page 3, line 25	
	page 4, line 24 -page 5, line 7 figures 1,2	
Y	WO 97 08898 A (BRITISH BROADCASTING CORP ;WELLS NICHOLAS DOMINIC (GB)) 6 March 1997 (1997-03-06)	1-27
A	abstract	28-34
	page 4, line 8 -page 5, line 28	20 04
	page 9, line 25 -page 11, line 4	
	page 13, line 3 -page 13, line 8	
	figures 3,4	
	-/	
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X Further documents are listed in the continuation of box C.	X Patent family members are listed in annex.
° Special categories of cited documents :	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier document but published on or after the international filing date	"X" document of particular relevance; the claimed invention
"L" document which may throw doubts on priority claim(s) or	cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention
"O" document referring to an oral disclosure, use, exhibition or other means	cannot be considered to involve an inventive step when the document is combined with one or more other such docu- ments, such combination being obvious to a person skilled
"P" document published prior to the international filing date but	in the art.
later than the priority date claimed	"&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
2 February 2000	08/02/2000
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Hampson, F

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